

Application Serial No.: 09/833,069  
Attorney Docket No.: 072257-0311920  
Amendment Dated February 22, 2005

## ***Amendment***

### ***Listing of Claims***

**Please replace all prior versions of the claims with the following listing of claims.**

#### **1-27. (Cancelled)**

**28. (Original)** A method for retrieving information from a database organized in a hierarchy having a parent, a first plurality of descendants each having a direct relationship to the parent, and a second plurality of descendants each having an indirect relationship to the parent through at least one of the first plurality of descendants, at least some of the second plurality of descendants having a direct relationship to the first plurality of descendants, the method comprising:

    locating an occurrence of a search term in either said first plurality of descendants or said second plurality of descendants;

    traversing the hierarchy from said occurrence to an instance of the parent using at least one of the direct relationship and the indirect relationship;

    traversing the hierarchy from said instance of the parent to an instance of one of the first plurality of descendants using the direct relationship;

    traversing the hierarchy from said instance of one of the first plurality of descendants to an instance of one of the at least some of the second plurality of descendants using the direct relationship therebetween; and

    building a context corresponding to said occurrence, said instance of the parent, said instance of one of the first plurality of descendants, and said instance of one of the at least some of the second plurality of descendants.

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29. **(Currently Amended)** The method of claim 28, wherein said traversing the hierarchy from said instance of the parent to an instance of one of the first plurality of descendants comprises ~~exhaustively~~ traversing the hierarchy from said instance of the parent to each instance of the first plurality of descendants directly related to thereto.

30. **(Original)** The method of claim 29, wherein said building a context comprises building a context corresponding to said occurrence, said instance of the parent, each instance of one of the first plurality of descendants, and said instance of one of the at least some of the second plurality of descendants.

31. **(Currently Amended)** The method of claim 28, wherein said traversing the hierarchy from said instance of one of the first plurality of descendants to an instance of one of the at least some of the second plurality of descendants comprises ~~exhaustively~~ traversing the hierarchy from said instance of one of the first plurality of descendants to each instance of the at least some of the second plurality of descendants directly related to thereto.

32. **(Original)** The method of claim 31, wherein said building a context comprises building a context corresponding to said occurrence, said instance of the parent, said instance of one of the first plurality of descendants, and each instance of one of the at least some of the second plurality of descendants.

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**33. (Currently Amended)** The method of claim 28, wherein said traversing the hierarchy from said instance of the parent to an instance of one of the first plurality of descendants comprises **exhaustively** traversing the hierarchy from said instance of the parent to each instance of the first plurality of descendants directly related to thereto; and wherein said traversing the hierarchy from said instance of one of the first plurality of descendants to an instance of one of the at least some of the second plurality of descendants comprises **exhaustively** traversing the hierarchy from each instance of one of the first plurality of descendants to each instance of the at least some of the second plurality of descendants directly related to thereto.

**34. (Original)** The method of claim 33, wherein said building a context comprises building a context corresponding to said occurrence, said instance of the parent, each instance of one of the first plurality of descendants, and each instance of one of the at least some of the second plurality of descendants.

**35. (Original)** The method of claim 28, further comprising:

    locating a second occurrence of the search term in either said first plurality of descendants or said second plurality of descendants;

    traversing the hierarchy from said second occurrence to an second instance of the parent using at least one of the direct relationship and the Indirect relationship;

    traversing the hierarchy from said second instance of the parent to a second instance of one of the first plurality of descendants using the direct relationship;

    traversing the hierarchy from said second instance of one of the first plurality of descendants to a second instance of one of the at least some of the second plurality of descendants using the direct relationship therebetween; and

    building a second context corresponding to said second occurrence, said second instance of the parent, said second instance of one of the first plurality of descendants, and said second instance of one of the at least some of the second plurality of descendants.

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36. (Original) The method of claim 35, further comprising presenting said context and said second context to a user.

37. (Original) A method for retrieving information from a database organized in a hierarchy having a plurality of parents, a first plurality of descendants, and a second plurality of descendants, each of the first plurality of descendants having direct relationships to at least one of the plurality of parents, each of the second plurality of descendants having indirect relationships to at least one of the plurality of parents, at least some of the second plurality of descendants having second direct relationships to at least one of the first plurality of descendants, the method comprising:

- locating an occurrence of a search term in either one of the first plurality of descendants or one of the second plurality of descendants;

- traversing the hierarchy from said occurrence to an instance of one of the plurality of the parents using at least one of the direct relationships or the indirect relationships;

- traversing the hierarchy from said instance of one of the plurality of parents to an instance of one of the first plurality of descendants using the direct relationships;
- traversing the hierarchy from said instance of one of the first plurality of descendants to an instance of one of the at least some of the second plurality of descendants using the second direct relationships;

- locating a second occurrence of the search term in either one of the first plurality of descendants or one of the second plurality of descendants;

- traversing the hierarchy from said second occurrence to an instance of a second one of the plurality of the parents using at least one of the direct relationships or the indirect relationships;

- traversing the hierarchy from said instance of said second one of the plurality of parents to an instance of a second one of the first plurality of descendants using the direct relationships;

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traversing the hierarchy from said instance of said second one of the first plurality of descendants to an instance of a second one of the at least some of the second plurality of descendants using the second direct relationships;

building a first context corresponding to said occurrence, said instance of one of the plurality of the parents, said instance of one of the first plurality of descendants, and said instance of one of the at least some of the second plurality of descendants; and

building a second context corresponding to said second occurrence, said instance of said second one of the plurality of the parents, said instance of said second one of the first plurality of descendants, and said instance of said second one of the at least some of the second plurality of descendants.

38-60. (Cancelled)

61. (New) A method for retrieving data from a database corresponding to a search term comprising:

organizing the data, based on relationships among the data, into a hierarchy including at least one predecessor group and a plurality of descendant groups, wherein said organizing the data comprises forming a relational table indicative of relationships between instances of said at least one predecessor group and instances of said plurality of descendant groups;

locating an occurrence of the search term in one of said plurality of descendant groups;

traversing said network from said occurrence in said one of said plurality of descendant groups to related data in said at least one predecessor group using said relationships among the data; and

building a context including said occurrence and said related data thereby retrieving data from the database corresponding to the search term.

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62. (New) The method of claim 61, further comprising traversing said hierarchy from said related data in said at least one predecessor group to second related data in said plurality of descendant groups using said relationships among the data.

63. (New) The method of claim 62, wherein said building a context comprises building a context including said occurrence, said related data, and said second related data thereby retrieving data from the database corresponding to the search term.

64. (New) The method of claim 61, further comprising traversing said hierarchy from said related data in said at least one predecessor group to a plurality of second related data in said plurality of descendant groups using said relationships among the data, said plurality of second related data corresponding to each instance of data in said plurality of descendant groups that is related to said related data in said at least one predecessor group.

65. (New) The method of claim 64, wherein said building a context comprises building a context including said occurrence, said related data, and said plurality of second related data thereby retrieving data from the database corresponding to the search term.

66. (New) The method of claim 61, wherein said traversing said hierarchy comprises traversing said hierarchy from said occurrence in said one of said plurality of descendant groups to a first plurality of related data in said at least one predecessor group using said relationships among the data, said first plurality of related data corresponding to each instance of data in said at least one predecessor group that is related to said occurrence.

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67. (New) The method of claim 66, further comprising traversing said hierarchy from each of said first plurality of related data in said at least one predecessor group to at least one second related data in said plurality of descendant groups using said relationships among the data, said at least one second related data corresponding to each instance of data in said plurality of descendant groups that is related to each of said first plurality of related data in said at least one predecessor group.

68. (New) The method of claim 67, wherein said building a context comprises building a context including said occurrence, said first plurality of related data, and said at least one second related data thereby retrieving data from the database corresponding to the search term.

69. (New) The method of claim 61, further comprising storing said context as a subset of the database.

70. (New) The method of claim 69, further comprising converting the data to a numeric format in an appropriate number system.

71. (New) The method of claim 61, wherein said forming a relational table comprises forming a many-to-many transfer file indicative of relationships between said instances of said at least one predecessor group and said instances of said plurality of descendant groups.

72. (New) The method of claim 71, wherein said forming a many-to-many transfer file comprises forming a many-to-many forward transfer file indicative of relationships from said instances of said at least one predecessor group to said instances of said plurality of descendant groups.

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73. (New) The method of claim 71, wherein said forming a many-to-many transfer file comprises forming a many-to-many reverse transfer file indicative of relationships from said instances of said plurality of descendant groups to said instances of said at least one predecessor group.

74. (New) The method of claim 61, wherein said organizing the data, based on relationships among the data, into said hierarchy further comprises forming a relational table indicative of relationships between instances of a first one of said plurality of descendant groups and a second one of said plurality of descendant groups.

75. (New) The method of claim 74, wherein said forming a relational table comprises forming a many-to-many transfer file indicative of relationships between said instances of said first one of said plurality of descendant groups and said instances of said second one of said plurality of descendant groups.

76. (New) The method of claim 75, wherein said forming a many-to-many transfer file comprises forming a many-to-many forward transfer file indicative of relationships from said instances of said first one of said plurality of descendant groups to said instances of said second one of said plurality of descendant groups.

77. (New) The method of claim 75, wherein said forming a many-to-many transfer file comprises forming a many-to-many reverse transfer file indicative of relationships from said instances of said second one of said plurality of descendant groups to said instances of said first one of said plurality of descendant groups.

78. (New) The method of claim 61, further comprising converting the data to a numeric format in an appropriate number system.



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79. (New) A method for retrieving data from a database corresponding to a search term comprising:

organizing the data, based on relationships among the data, into a network including at least one predecessor group and a plurality of descendant groups;

locating an occurrence of the search term in one of said plurality of descendant groups;

traversing said network from said occurrence in said one of said plurality of descendant groups to related data in said at least one predecessor group using said relationships among the data;

traversing said network from said related data in said at least one predecessor group to a plurality of second related data in said plurality of descendant groups using said relationships among the data, said plurality of second related data corresponding to each instance of data in said plurality of descendant groups that is related to said related data;

building a context including said occurrence, said related data, and said plurality of second related data; and

providing the entire context in response to the search term.

80. (New) The method of claim 79, further comprises storing said entire context as a subset of the database.

81. (New) The method of claim 79, wherein said organizing the data, based on relationships among the data, into a network comprises forming a relational table indicative of relationships between instances of said at least one predecessor group and instances of a first one of said plurality of descendant groups.

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82. (New) The method of claim 81, wherein said forming a relational table comprises forming a many-to-many transfer file indicative of relationships between said instances of said at least one predecessor group and said instances of said first one of said plurality of descendant groups.

83. (New) The method of claim 82, wherein said forming a many-to-many transfer file comprises forming a many-to-many forward transfer file indicative of relationships from said instances of said at least one predecessor group to said instances of said first one of said plurality of descendant groups.

84. (New) The method of claim 82, wherein said forming a many-to-many transfer file comprises forming a many-to-many reverse transfer file indicative of relationships from said instances of said first one of said plurality of descendant groups to said instances of said at least one predecessor group.

85. (New) The method of claim 79, wherein said organizing the data, based on relationships among the data, into a network further comprises forming a relational table indicative of relationships between instances of a first one of said plurality of descendant groups and a second one of said plurality of descendant groups.

86. (New) The method of claim 85, wherein said forming a relational table comprises forming a many-to-many transfer file indicative of relationships between said instances of said first one of said plurality of descendant groups and said instances of said second one of said plurality of descendant groups.

87. (New) The method of claim 86, wherein said forming a many-to-many transfer file comprises forming a many-to-many forward transfer file indicative of relationships from said instances of said first one of said plurality of descendant groups to said instances of said second one of said plurality of descendant groups.

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88. (New) The method of claim 86, wherein said forming a many-to-many transfer file comprises forming a many-to-many reverse transfer file indicative of relationships from said instances of said second one of said plurality of descendant groups to said instances of said first one of said plurality of descendant groups.

89. (New) The method of claim 79, further comprising converting the data to a numeric format in an appropriate number system.

90. (New) The method of claim 79, wherein said organizing the data comprises organizing data into said network including a plurality of predecessor groups, wherein at least one of said plurality of predecessor groups is a descendant group with respect to another one of said plurality of predecessor groups, and wherein at least one of said plurality of predecessor groups is a parent group having no other predecessor groups and only descendant groups.

91. (New) The method of claim 90, wherein said traversing said network from said occurrence in said one of said plurality of descendant groups to related data in said at least one predecessor group comprises traversing said network from said occurrence in said one of said plurality of descendant groups to a plurality of third related data in said plurality of predecessor groups and to parent related data in said parent predecessor group using said relationships among the data, wherein said plurality of third related data corresponds to each instance of said at least one predecessor group that has data related to said occurrence.

92. (New) The method of claim 91, wherein said building a context comprises building a context including said occurrence, said related data, said plurality of second related data, said plurality of third related data, and said parent related data.

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93. (New) The method of claim 91, further comprising traversing said network from said parent related data in said parent predecessor group to a plurality of fourth related data in said plurality of descendant groups using said relationships among the data, said plurality of fourth related data corresponding to each instance of said plurality of descendant groups that includes data related to said parent related data.

94. (New) The method of claim 93, wherein said building a context comprises building a context including said occurrence, said related data, said plurality of second related data, said plurality of third related data, said plurality of fourth related data, and said parent related data.

95. (New) The method of claim 79, wherein said organizing data into said network comprises organizing data into said network including a plurality of predecessor groups, wherein at least one of said plurality of predecessor groups is a descendant group with respect to another one of said plurality of predecessor groups, and wherein at least one of said plurality of predecessor groups is a parent group having no other predecessor groups and only descendant groups;

wherein said traversing said network from said occurrence in said one of said plurality of descendant groups to related data in said at least one predecessor group comprises traversing said network from said occurrence in said one of said plurality of descendant groups to parent related data in said parent group;

wherein said traversing said network from said related data in said at least one predecessor group to a plurality of second related data in said plurality of descendant groups comprises traversing said network from said parent related data in said parent group to a plurality of third related data in said plurality of descendant groups using said relationships among the data, said plurality of third related data corresponding to each instance of data in said plurality of descendant groups that is related to said parent related data; and

wherein said building said context comprises building a context including said occurrence, said parent related data, and said plurality of third related data.